IN THE CLAIMS:

All pending claims and their present status are produced below.

1.   (Currently Amended) A computer-implemented method of <u>pixel-level</u> image resampling, comprising:

> <u>receiving an input image to be resampled;</u>

> ~~estimating input image statistics~~ <u>calculating second order moments for an input auto-correlation matrix and an input covariance vector</u> from input pixel values <u>in an input context for</u> ~~associated with an~~ <u>the</u> input image to be resampled;

> <u>transposing the input auto-correlation matrix and the input covariance vector using the second order moments and a transpose operator;</u>

> substituting the <u>transposed</u> input ~~image statistics~~ <u>auto-correlation matrix and the transposed input covariance vector</u> for <u>an</u> unknown output ~~image statistics~~ <u>auto-correlation matrix and an unknown output covariance vector for an output context</u>;

> determining an optimum set of filter tap weights <u>for minimizing prediction error for a resampled output image</u> from the <u>output auto-correlation matrix and the output covariance vector</u>; and

> calculating output pixel values <u>from the input pixel values and the optimum set of filter tap weights</u> to produce [[an]] <u>the resampled</u> output image.

2.   (Canceled)

3.   (Canceled)

4.   (Currently Amended) The method of claim [[2]] 1, wherein the step of determining
an optimum set of filter tap weights further comprises computing the product of the output
covariance vector and the inverse of the output auto-correlation matrix.

5.   (Currently Amended) The method of claim [[2]] 1, wherein the step of calculating
output pixel values further comprises computing the product of the set of filter tap weights
and input pixel values, for pixel values in the input context.

6.   (Currently Amended) A computer-implemented method of image resampling,
comprising:

receiving an input image to be resampled;

estimating an auto-correlation matrix and a covariance vector from input pixel values
        associated with an input image to be resampled,
        the estimation comprising:

calculating second order moments for [[the]] an input auto-correlation matrix and [[the]] an
        input covariance vector from input pixel values in an input context for the input
        image; and

computing transposing the input auto-correlation matrix and the input covariance vector
        using the second order moments and a transpose operator;

substituting the transposed input image statistics auto-correlation matrix and the transposed
        input covariance vector for an unknown output image statistics auto-correlation
        matrix and an unknown output covariance vector for an output context;

calculating an optimum set of filter tap weights for minimizing prediction error for a
        resampled output image as the product of the output covariance vector and the inverse
        of the output auto-correlation matrix; and

calculating output pixel values to produce [[an]] the resampled output image as the product

of the optimum set of filter tap weights and input pixel values for pixel values in the

input context.

7-12.   (Canceled)

13.   (Currently Amended) A computer-readable storage medium encoded with a

computer program product for image resampling, the computer program product computer-

readable storage medium comprising: a computer-readable storage medium; and

computer program code, coded on the computer-readable storage medium, comprising:

a receiving module for receiving an input image to be resampled;

an estimation module configured to estimate input image

statistics calculate second order moments for an input auto-correlation

matrix and an input covariance vector from input pixel values in an input

context for associated with an the input image to be resampled;

a transposing module configured to transpose the input auto-correlation matrix

and the input covariance vector using the second order moments and a

transpose operator;

a substitution module configured to substitute the transposed input image

statistics auto-correlation matrix and the transposed input covariance

vector for an unknown output image statistics auto-correlation matrix

and an unknown output covariance vector for an output context;

a filter weight calculation module configured to calculate determine an

optimum set of filter tap weights for minimizing prediction error for a

resampled output image from the output auto-correlation matrix and

the output covariance vector; and

an output pixel calculation module configured to calculate output pixel values

from the input pixel values and the optimum set of filter tap weights to

produce [[an]] the resampled output image.

14.   (Canceled)

15.   (Canceled)

16.   (Currently Amended) The ~~computer program product~~ computer-readable storage medium of claim [[14]] 13, wherein the filter weight calculation module configured to ~~calculate~~ determine an optimum set of filter tap weights is further configured to calculate the product of the output covariance vector and the inverse of the output auto-correlation matrix.

17.   (Currently Amended) The ~~computer program product~~ computer-readable storage medium of claim 14, wherein the output pixel calculation module configured to calculate output pixel values is further configured to calculate the product of the set of filter tap weights and input pixel values, for pixel values in the input context.

18.   (Canceled)

19.   (Currently Amended) A system for image resampling, comprising:

a processor;

means for receiving an input image to be resampled;

means for ~~estimating input image statistics~~ calculating second order moments for an input auto-correlation matrix and an input covariance vector from input pixel values in an input context for ~~associated with an~~ the input image to be resampled;

means for transposing the input auto-correlation matrix and the input covariance

vector using the second order moments and a transpose operator;

means for substituting the transposed input ~~image statistics~~ auto-correlation matrix

and the transposed input covariance vector for an unknown output ~~image~~

~~statistics~~ auto-correlation matrix and an unknown output covariance vector for

an output context;

means for determining an optimum set of filter tap weights for minimizing prediction

error for a resampled output image from the output auto-correlation matrix and

the output covariance vector; and

means for calculating output pixel values from the input pixel values and the

optimum set of filter tap weights to produce [[an]] the resampled output image.

20.   (Canceled)

21.   (Canceled)

22.   (Currently Amended) The system of claim [[20]] 19, wherein the means for

determining an optimum set of filter tap weights further comprises computing the product of

the output covariance vector and the inverse of the output auto-correlation matrix.

23.   (Currently Amended) The method of claim [[20]] 19, wherein the means for

calculating output pixel values further comprises computing the product of the set of filter tap

weights and input pixel values, for pixel values in the input context.

24.   (Currently Amended) A system for image resampling an image, comprising:

a processor;

means for estimating an auto-correlation matrix and a covariance vector from input pixel values associated with an input image to be resampled, the estimation comprising:

means for receiving an input image to be resampled;

means for calculating second order moments for [[the]] an input auto-correlation matrix and [[the]] an input covariance vector from input pixel values in an input context for the input image to be resampled; [[and

means for computing transposing the input auto-correlation matrix and the input covariance vector using the second order moments and a transpose operator;

means for substituting the transposed input image statistics auto-correlation matrix and the transposed input covariance vector for an unknown output image statistics auto-correlation matrix and an unknown output covariance vector for an output context;

means for calculating an optimum set of filter tap weights for minimizing prediction error for a resampled output image as the product of the output covariance vector and the inverse of the output auto-correlation matrix; and

means for calculating output pixel values to produce [[an]] the resampled output image as the product of the set of filter tap weights and input pixel values for pixel values in the input context.

25.   (Currently Amended) The method of claim [[3]] 1, wherein the input context comprises a rectangular window centered on each coordinate in the input image.

26.   (Previously Presented) The method of claim 6, wherein the input context comprises a rectangular window centered on each coordinate in the input image.

27. (Currently Amended) The ~~computer program product~~ <u>computer-readable storage medium</u> of claim [[15]] <u>13</u>, wherein the input context comprises a rectangular window centered on each coordinate in the input image.

28. (Currently Amended) The ~~computer program product~~ <u>system</u> of claim [[18]] <u>19</u>, wherein the input context comprises a rectangular window centered on each coordinate in the input image.